

1    **WHAT IS CLAIMED IS:**

2        1. A helmet having detecting tire status capability, comprising  
3            a body with an opening;  
4            a face guard connected pivotally to the body to cover the opening;  
5            a controller in the body linked to at least one tire status detector in at  
6            least one wheel wherein the controller receives at least one tire status signal from  
7            the at least one tire status detector;  
8            a projector mounted in the body and faced to the opening, wherein the  
9            projector is connected to the controller; and  
10           a power circuit is connected to the controller and the projector to supply  
11           power.

12        2. The helmet as claimed in claim 1, wherein the controller comprises:  
13            a microprocessor connected to an external memory;  
14            an RF receiver received the tire status signal from the at least one tire  
15            status detector and connected to the microprocessor, wherein the RF receiver  
16            outputs the tire status signal to the microprocessor;  
17            an alarm circuit connected to the microprocessor; and  
18            a driver connected between the microprocessor and the projector.

19        3. The helmet as claimed as claim 2, wherein the controller further  
20           comprises an enabling switch mounted in the body and connected to the  
21           microprocessor to detect whether a rider worn the helmet.

22        4. The helmet as claimed as claim 2, wherein the controller further  
23           comprises a face guard sensor switch mounted on the opening and connected to  
24           the microprocessor to detect whether the face guard covers completely.

1           5. The helmet as claimed as claim 3, wherein the controller further  
2           comprises a face guard sensor switch mounted on the opening and connected to  
3           the microprocessor to detect whether the face guard covers completely.

4           6. The helmet as claimed as claim 2, wherein the controller further  
5           comprises a power detecting unit connected between the microprocessor and the  
6           power circuit.

7           7. The helmet as claimed as claim 6, wherein the power detecting unit is  
8           an analog to digital converter (ADC).

9           8. The helmet as claimed as claim 6, wherein the power detecting unit is  
10          a comparator.

11          9. The helmet as claimed as claim 7, wherein the microprocessor  
12          comprises has a receiving tire status signal means and a determining abnormal  
13          tire status signal means.

14          10. The helmet as claimed as claim 9, wherein the receiving tire status  
15          signal means comprises steps of

16           (a) detecting whether the enabling switch turns on, wherein if the  
17          enabling switch turns on executing the next step and if the enabling turns off,  
18          detecting the enabling switch until the enabling switch turns on;

19           (b) detecting whether the face guard sensor switch turns on, wherein if  
20          the face guard sensor switch turns on, executing the next step and if the face  
21          guard sensor turns off, alarming or display specific alarm symbol and keep  
22          detecting the face guard sensor switch until the face guard sensor switch turns  
23          on;

24           (c) detecting whether the power circuit is in low power state, wherein if

1 yes alarming or display specific alarm symbol and if not, executing the next step;

2 (d) receiving the tire status signals from the front and rear tire status

3 sensors;

4 (e) reading at least one preset tire parameter corresponding to the at least

5 one tire status signal;

6 (f) executing the determining abnormal tire status signal means; and

7 (g) determining whether the at least one tire status signal is abnormal,

8 wherein if yes, alarming or display alarming symbols and storing the abnormal

9 tire status signals in the memory and if not, display the current tire status values

10 on the face guard.

11 11. The helmet as claimed as claim 9, wherein the determining abnormal

12 tire status signal means comprises steps of

13 (a) calculating a largest pressure value which is equal to the presetting

14 pressure value multiplied x%;

15 (b) calculating a least pressure value which is equal to the presetting

16 pressure value multiplied y%, wherein the x is larger than y;

17 (c) comparing the current tire pressure signal with the largest pressure

18 value to determine whether the current tire pressure signal is larger than the

19 largest pressure value; if yes, the current tire pressure signal is abnormal; if not,

20 executing the next step;

21 (d) comparing the current tire pressure signal with the least pressure

22 value to determine whether the current tire pressure signal is less than the least

23 pressure value, wherein if yes, the current tire pressure signal is abnormal and if

24 not, executing the next step; and

1 (e) the current tire pressure signal is normal.

2 12. The helmet as claimed as claim 10, wherein the determining

3 abnormal tire status signal means comprises steps of

4 (a) calculating a largest pressure value which is equal to the presetting  
5 pressure value multiplied x%;

6 (b) calculating a least pressure value which is equal to the presetting  
7 pressure value multiplied y%, wherein the x is larger than y;

8 (c) comparing the current tire pressure signal with the largest pressure  
9 value to determine whether the current tire pressure signal is larger than the  
10 largest pressure value; if yes, the current tire pressure signal is abnormal; if not,  
11 executing the next step;

12 (d) comparing the current tire pressure signal with the least pressure  
13 value to determine whether the current tire pressure signal is less than the least  
14 pressure value, wherein if yes, the current tire pressure signal is abnormal and if  
15 not, executing the next step; and

16 (e) the current tire pressure signal is normal.

17 13. The helmet as claimed as claim 5, wherein the enabling switch and  
18 the face guard sensor are photocouplers.

19 14. The helmet as claimed as claim 5, wherein the enabling switch and  
20 the face guard sensor are mechanical switches

21 15. The helmet as claimed as claim 5, wherein the enabling switch and  
22 the face guard sensor are pressure switches.